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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,864	12/01/2003	Yoji Nakajima	TOW-054	2787
959	7590	10/11/2005	EXAMINER	
LAHIVE & COCKFIELD, LLP. 28 STATE STREET BOSTON, MA 02109			HEPPERLE, STEPHEN M	
			ART UNIT	PAPER NUMBER
			3753	

DATE MAILED: 10/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/725,864	<b>Applicant(s)</b> NAKAJIMA ET AL.	
	<b>Examiner</b> Stephen M. Hepperle	<b>Art Unit</b> 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,11 and 12 is/are rejected.
- 7) ☒ Claim(s) 3,6-10 and 13-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/01/03</u> . | 6) <input type="checkbox"/> Other: ____  |

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Claims 11-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 11, "said first diaphragm" has no antecedent basis. In claim 12, it is not understood what is meant by "at least".

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Gotthelf (5,381,819). Gotthelf (Fig. 5) shows a pressure regulator with a valve head 30 connected to a diaphragm 64 by a rod that has a passage connecting back pressure chamber 42 (Fig. 4) with aspirator chamber 50. Nozzle 104 connects the aspirator chamber with the outlet 20 (secondary port). Piece 28 includes a guide member at chamber 42 that provides a guide sleeve around the circumference of the valve member below the head. Note adjustment screw 84. Note that the fluid controlled (fuel gas, claim 16) has been given no weight in these apparatus claims.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gotthelf. It is notoriously well known to coat relatively moving parts in a valve with friction reducing

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flouroresin such as PTFE (Teflon). It would have been obvious to coat the Gottelf valve member 48 and guide sleeve with such a substance to reduce friction and binding.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gotthelf in view of Masom et al. (2,841,173). Masom shows another pressure regulator with a separate seat piece 10 having a tapered surface and a separate guide piece 21 for the valve head 20. it would have been obvious to provide the Gotthelf regulator with a tapered valve seat to reduce turbulence of flow past the seat.

Claims 11-12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 3, 6-10 and 13-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hoffman shows a pressure regulator with a valve head 23 connected to a piston 58 by a rod 52 that has a passage connecting back pressure chamber 34 with aspirator chamber 57. Nozzle 56 connects the aspirator chamber with the outlet 12 (secondary port). Note adjustment screw 65. Merritt shows a fuel cell having a pressure regulator 122, humidifier 118, and ejector 124. Neff shows a pressure regulator where movement of threaded parts 66 or 105 will adjust the bias of the spring. Adler shows a similar arrangement (Fig. 1). Carter shows leaf springs 564, 764, providing frictional damping by sliding along the bonnet walls 504, 704. Annin and Kleczek show tapered seats like Masom et al.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. Hepperle whose telephone number is 571-272-4913. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene can be reached on 571-272-4930. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Stephen M. Hepperle  
Primary Examiner  
Art Unit 3753

SMH